

# Office Action Summary

**Application No.**

10/611,315

**Applicant(s)**

YAMADA ET AL.

**Examiner**

Tonia LM Dollinger

**Art Unit**

2181

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-893)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: included herein
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 1 is objected to because of the following informalities:

In claim 1, lines 8 and 14 contain the limitation "compressed code type informations", which is unclear. Is there more than one piece of information? For purposes of examination it will be interpreted as "compressed code type information". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Auerbach et al (U.S. Patent # 6,879,266 B1), herein referred to as Auerbach.
4. As per claim 1, Auerbach discloses a micro controller, comprising a CPU (See figure 2: Processor 202), performing processing in accordance with a program, said micro controller further comprising:

a. a memory (See figure 2: Memory 204), storing: grouped compressed codes (See figure 2: Compressed data 210, column 3, compressed codes are grouped in element 210), resulting from the conversion of original codes into variable length codes (See column 3, lines 7-8 and column 6, lines 20-23: Storage of variable length compressed instructions is done in memory);

b. an address conversion information (See column 8, lines 7-18: Compressed instructions are mapped), specifying the head address of each group of grouped compressed codes of variable length (See column 9, lines 3-10: There is offset field which indicates start of compressed block); and

c. compressed code type informations in a block corresponding to each group, each specifying, the code length of the compressed codes of variable length contained in each group (See column 9, lines 43-49: Offset indicate length of compression, Each group 210a-210z has six information bits to specify the code lengths.); and

d. a compressed code processing part, specifying, from a code address output by the CPU, an address conversion information and compressed code type information to be referred, using the specified address conversion information and the compressed code type information to determine the corresponding compressed code address, and reading the corresponding compressed code (See column 8, lines 7-18: Compressed instructions are mapped).

5. As per claim 2, Auerbach discloses the micro controller as set forth in claim 1, wherein the memory furthermore stores dictionary information for decompressing compressed codes into the original codes (See figure 3: A decompression engine 216 exists and contains a decode table 232 as well as other information to help decode) and the compressed code processing part refers the dictionary information to decompress

the compressed code, which has been read, into the original code (See column 5, lines 60-64: Decompression will yield the original code).

6. As per claim 3, Auerbach discloses the micro controller as set forth in claim 1, wherein said compressed code processing part stores information for identifying the area in said memory in which compressed codes are stored (See figure 2: Compressed Program Data 212), the area in said memory in which the address conversion information are stored (See column 8, lines 7-18: Compressed instructions are mapped), and the area in which the compressed code type information are stored (See figure 2: Compressed Program Instructions 210).

7. As per claim 4, Auerbach discloses the micro controller as set forth in claim 3, wherein said memory stores said address conversion information in the order of blocks of original codes, and to store said compressed code type information in the order of the original codes (See figure 2: The instructions and data are stored in a corresponding fashion within blocks).

8. As per claim 7, Auerbach discloses the micro controller as set forth in claim 1, wherein said compressed code processing part reads, from said memory and prior to reading a compressed code, a compressed code set, having a predetermined size and containing the compressed code to be read (See figure 3 and column 6, lines 1-9: The instructions are read from memory and the code has been compressed to a known length), said micro controller is equipped with areas, respectively storing temporarily the address conversion information, the compressed code type information, and the

compressed code set that were used just immediately before (See figure 2: Information saved in memory), to use the address conversion information and the compressed code type information that are stored temporarily in said areas in a case where the code address output by the CPU is contained in the same block as the compressed code that was read just immediately before (See figure 2: The information found in memory is first sent to the decompression engine before it goes to the processor and acts like a buffer), and to read the compressed code from the compressed code set that is stored temporarily in said area in a case where the compressed code corresponding to the code address output by the CPU is contained in the compressed code set that was read just immediately before (See figure 3: Decompressed code will be available for the processor).

9. As per claim 8, Auerbach discloses the micro controller as set forth in claim 1, wherein said compressed code contains the same program as the original code (See column 5, lines 60-64: Decompression will yield the original code).

10. As per claim 9, Auerbach discloses the micro controller as claimed in claim 1, wherein the code address includes a group number identifying the head address of the group and an order number identifying the compressed code type information in the block corresponding to the group identified by the group number, and the processing part determines a base address of the block of the compressed code type informations in accordance with the group number and a distance from the base address to the compressed code type information identified by the order number using a sum of values of the compressed type informations between the base address and the compressed

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code type information identified by the order number (p17-18) (See column 9, lines 3-10: There is an offset field which indicates the start of the compressed block when it is added to the original address.).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Auerbach in view of Henkel et al (U.S. Patent # 6,691,305), herein referred to as Henkel.

13. As per claim 5, Auerbach discloses the micro controller as set forth in claim 2. Auerbach does not teach the manner in which the dictionary is organized according to code lengths.

14. Henkel does teach wherein said dictionary information are stored in areas that are divided according to the code lengths of the corresponding compressed codes (See figure 11A and 11D; column 28, lines 2-9; and column 26, lines 63-67: There are two areas in the dictionary, similar to what is taught by Auerbach (see rejection of claim 2). Compressed codes are clearly distinguished by code length and length tags "N.Bo" for figure 11A and "100" for figure 11 D, thus the two areas are distinguished by code length), and in each area, said dictionary information are stored in the order of the

codes of said corresponding compressed codes (See column 27, lines 2-5; and column 27, lines 7-9: Since the decoding tables are created during the compression of codes, it is assumed they are created (stored) in the order of the code of the corresponding compressed codes).

15. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Auerbach with Henkel. Since Auerbach is silent on the manner in which data in the dictionary is organized (with exception to the two sections), one having ordinary skill in the art would either have to come up with their own organizational scheme or use one that has been previous taught. Henkel teaches a simple and elegant organization scheme that would not be too hard to implement on any system. One having ordinary skill in the art would be able to adapt the teachings of Henkel with that of Auerbach.

16. As per claim 6, Auerbach and Henkel teach the micro controller as set forth in claim 5. Auerbach also teaches Wherein said compressed code processing part specifies, from the compressed code type information, the area in which the dictionary information to be referred is stored, and, based on the compressed code, specifies the dictionary information to be referred that is contained in the specified area (See figure 3: There are areas specified to hold certain types of data in the dictionary).

### ***Response to Arguments***

17. Applicant's arguments filed February 4, 2008 have been fully considered but they are not persuasive.

18. On page 7, Applicant argues in essence:

*"The 6-bit offset representing the length of the compressed code and therefore, cannot be the compressed code type as recited in claims of the present invention."*

However, the compressed code type of the claims indicates the code length of each of the compressed codes (see arguments submitted by applicant on page 7 to confirm this). So the 6-bit offset is properly interpreted as the code type of the claims since the purpose of both of them is to indicate the code length. Therefor this argument is moot.

19. Claim 9 is not distinguished/argued over the prior by the applicant and therefore claim 9 is presumed to be anticipated by Auerbach.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tonia LM Dollinger whose telephone number is (571) 272-4170. The examiner can normally be reached on Monday-Friday with first Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alford Kindred can be reached on (571) 272-4037. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TLMD

/Tonia LM Dollinger/  
Primary Examiner, Art Unit 2181